



Report of the DEPARTMENT OF AGRICULTURE For the year 1944.

PART I. AGRICULTURE IN NYASALAND.

POLICY.

The Department has continued to strive for the maximum production of crops, whilst endeavouring to the full extent of its resources to promote the more conservative use of the land and to check soil erosion. The measure of success achieved in regard to production is that, despite unfavourable weather in many parts of the Protectorate, the general output of crops has been raised and the export of several commodities increased. Wheat flour and sugar remain the only agricultural products which it has been necessary to import. Some improvement, though slight, has been achieved in the conservation of the soil.

PRODUCTION AND EXPORT.

The weather of the 1944 crop season cannot be described as having favoured agricultural activities generally, although the distribution of what was a lighter rainfall than normal was satisfactory for the majority of food crops. The results achieved may therefore be regarded with some justification as a tribute to the efforts of all concerned. A cold sunless spell in February was detrimental to both tobacco and tea, but the quality of the former finally emerged as above average, which largely offset deficiency in yield and resulted in a fairly successful season. Tea suffered a further climatic adversity in the repetition of mid-seasonal drought which has now afflicted the crop for four successive seasons. Nevertheless exports exceeded those for 1943 and apart from local consumption and small sales to the Rhodesias the entire crop was again sold to the Ministry of Food. The acreage under Tung continues to increase and the export of oil, under the direction of the Ministry of Supply, was approximately double that of 1943. On the whole the season was a fair one for the Cotton crop, good cool season rains in the Lower River districts enabling a late crop to be harvested that was larger than in the previous year. Satisfactory export arrangements were made for both lint and seed.

At the beginning of 1944 the food position was not entirely satisfactory; a shortage of maize in the Lil'ongwe area threatened distress and dislocation of further production if not promptly relieved. Accordingly approximately 1,000 tons of foodstuffs were made available (mainly from the Southern Province) to tide the population over until the new harvest which was generally satisfactory throughout the Protectorate. Beans and groundnuts yielded useful surpluses which were readily absorbed by the Rhodesias. Rice was adversely affected by shortage of rain, but nevertheless a surplus to local requirements was produced for the first time during the war. The production of wheat and European potatoes was substantially increased.

European production, and acreage, of the principal crops are given in the following table:—

	Acres		Yield in lb.	
	1944	1943	1944	1943
Tea	19,594	19,541	12,935,985	11,141,447
Tung	8,349	7,015	267,838	160,165
Tobacco	6,344	7,852	2,514,213	2,256,705
Sisal	1,196	923	805,249	727,163
Cotton (lint)	112	98	12,448	11,382
Rubber	1,430	1,430	196,350	235,086
Soya Beans	2,038	1,285	1,348,260	846,800

Native production and numbers of growers for the two principal crops, viz., cotton and tobacco, are shown below :—

				No. of Growers*		Amount Sold	
				1944	1943	1944	1943
						Short tons	
Cotton (seed cotton) ...	...	...	...	48,474	38,599	5,409	3,411
Tobacco ...	...	...	...	93,591	108,147	9,852	12,256

* Approximate.

The exported amounts and values of the various items of agricultural produce and raw materials were as follows :—

				Amount		Value	
				1944	1943	1944	1943
				lb.	lb.	£	£
Beeswax ...	...	...	...	9,805	4,474	425	186
Capsicums and Chillies ...	...	...	...	31,515	16,369	760	205
Cotton (Lint) ...	...	...	...	2,526,868	4,019,110	77,991	100,028
Cotton (Seed) ...	...	...	...	691,268	3,104,031	822	3,371
Fibre (sisal) ...	...	...	...	190,926	42,164	1,570	226
Potatoes ...	...	...	...	281,034	218,054	800	487
Maize and Maize Flour ...	...	...	...	210,200	3,006,021	528	7,549
Rubber ...	...	...	...	217,263	316,133	10,327	7,122
Soya Beans ...	...	...	...	1,166,790	1,204,763	7,553	2,151
Strophanthus ...	...	...	...	18,161	15,116	1,816	1,512
Tea ...	...	...	...	12,482,915	10,975,211	586,638	503,031
Tobacco :							
Leaf dark-fired ...	...	...	...	8,651,616	7,441,137	414,427	279,043
Leaf flue-cured ...	...	...	...	765,426	555,463	36,979	20,830
Leaf air-cured ...	...	...	...	1,262,947	824,747	62,398	30,928
Strips dark-fired ...	...	...	...	2,626,562	7,369,923	108,094	276,372
Strips flue-cured ...	...	...	...	846,542	740,537	34,324	27,770
Strips air-cured ...	...	...	...	1,472,100	1,605,669	61,166	60,212
Tung Oil ...	...	...	...	89,814	59,166	11,628	5,917
Tung Seed ...	...	...	...	3,017	1,300	152	65
Castor Seed ...	...	...	...	188,189	48,900	784	204
Beans ...	...	...	...	1,836,215	—	10,988	—
Groundnuts ...	...	...	...	396,448	—	4,425	—
Total ...				...	...	1,434,595	1,327,209

TOBACCO.

Despite unfavourable weather conditions the tobacco season was not unsatisfactory in so far as the quality of leaf was generally above average and prices were the highest on record. The total quantity of leaf sold fell 17% below last year's record harvest, partly on account of unfavourable weather conditions but also because the total number of Trust Land growers had declined appreciably as a result of increased emigration and the abnormal concentration on food crops occasioned by the maize shortage in the main tobacco area of the Central Province.

All through the Protectorate there was a reduction of 13% on the number of native growers from the previous year and this, together with climatic causes, combined to reduce the Native Trust Land crop to 21% below last year's record weight. However, despite the sunless weather of February and March, the proportion of long leaf was considerably higher than usual in the dark fired crop although it was somewhat lacking in body. Moreover, in the Northern Province particularly, the curing and grading were more conscientiously performed than in recent years, and the average price of 5.43d. per lb. to the grower was $\frac{3}{4}$ d. more than the previous record price of 1943. Thus the deficit in production was not equally reflected in the total disbursements to Trust Land growers, to whom the payment of £234,000 was but 12% less than last year. The average receipt per grower was £3 6s. 4d. The air-cured crop of the Central area did not enjoy the same degree of success as the fire-cured tobacco, being adversely affected by the weather both as regards quantity and quality. It totalled less than one million lb. for which the growers were paid an average price of 5.22d. per lb.

The general excellence of the fire-cured leaf and the satisfactory condition in which it was offered for sale greatly facilitated the actual process of marketing which was completed with exceptional smoothness despite shortage of competent market staff. Mention must also be made of a successful experiment in which over 100,000 lb. of leaf were bought by an entirely African staff at Kasungu.

The European flue-cured crop at 2 $\frac{1}{2}$ million lb. was, with the exception of 1943, the smallest crop for six years, but the average price of 10.69d. per lb. was the highest that has been obtained since the inauguration of auction sales. The leaf bought for export averaged 12.25d. per lb., but that for local consumption, between one-quarter and one-fifth of the total, fetched only 3d. per lb.

Actual production of various types was as follows :—

EUROPEAN				1944 lb.	1943 lb.
Flue-cured	...	...	...	2,219,195	1,940,017
Fire-cured	...	...	...	225,886	235,274
Air-cured	...	...	...	69,102	81,414
				<u>2,514,183</u>	<u>2,256,705</u>
NATIVE				1944 lb.	1943 lb.
Flue-cured	...	...	...	50,008	153,338
Fire-cured	...	...	...	15,833,402	20,527,595
Air-cured	...	...	...	3,820,346	3,831,796
				<u>19,703,756</u>	<u>24,512,729</u>

The quantities of the different types sold on the Auction Floor, and the average prices paid were as follows :—

				Amount (to nearest 1,000 lb.)		Average price per lb.	
				1944	1943	1944	1943
Flue-cured	...	...	...	2,300,000	2,104,000	10.64d.	9.10d.
Fire-cured	...	...	...	9,786,000	12,066,000	8.27d.	7.52d.
Air-cured	...	...	...	977,000	1,368,000	8.19d.	7.73d.

The number of registered Native Trust Land growers and the average amount of tobacco produced per grower were as follows :—

				Growers		Yields per Grower	
				1944	1943	1944 lb.	1943 lb.
Central Province	...	...	...	55,298	68,052	147.7	160.8
Southern Province	...	...	...	15,190	16,184	166.0	192.1

The amount of tobacco produced from growers on Native Trust Land and Private Estates respectively are shown below :—

				Trust Land		Private Estates	
				1944 lb.	1943 lb.	1944 lb.	1943 lb.
Central Province	...	...	...	8,168,911	10,434,047	6,028,140	8,133,879
Southern Province	...	...	...	2,523,046	3,108,351	2,983,659	2,836,452
				<u>10,691,957</u>	<u>13,542,398</u>	<u>9,011,799</u>	<u>10,970,331</u>

COTTON.

Following upon one of the most disappointing cotton crops in recent years that of 1944 may be regarded as good, although it was only two-thirds of the 1942 harvest. In the Lower River districts, which produced 85% of the total, all the early fruiting points were destroyed by Red Bollworm as they formed and a real flush of flowers did not occur until the end of May. Good cool season rains enabled these to set, partially swamping the bollworm population, and producing a crop which was harvested between late July and late September. Although better than in 1943, the estimated yield per acre was only 178 lb. of seed cotton.

In the Central Province late rains further reduced the already dwindling interest in cotton growing in that area.

In the Karonga district, early onset of the rains prevented the full yield of the crop from being reaped.

Details of Trust Land and Private Estate seed cotton production in short tons were as follows :—

Southern Province					Central Province				
Port Herald	...	...	...	1,424	Ncheu	...	...	...	12
Chikwawa	...	...	...	2,969	Dedza	...	...	...	98
Cholo	...	...	...	261	Dowa	...	...	...	13
Blantyre and Neno	...	...	...	223	Kota Kota	...	...	...	40
Liwonde	...	...	...	92	Northern Province				
Fort Johnston	...	...	...	29	Karonga	...	...	...	248
				<u>4,998</u>					<u>411</u>

Of the total of 5,409 tons, 804 tons were produced by native tenants on private estates. The comparative figures for 1943 were 3,411 and 497 tons respectively.

The crop was again purchased under a guarantee given by the Ministry of Supply, whereby the disposal of the Protectorate's cotton is assured for the duration of the war and one year afterwards. As in 1943 the crop was handled and processed by Nyasaland cotton firms acting as agents for Government

and 8,480 bales were produced. In the event the Ministry of Supply did not require to take delivery of the lint which was successfully sold by tender to local firms for export. The profits from these transactions, together with those made from similar sales last year, are being paid into the Native Development and Welfare Fund, and are therefore available for the general benefit of the African community.

Seed cotton was again bought in two grades at prices which remained fixed for the season and which were the same as in 1943, with the exception of Karonga district where a premium of $\frac{1}{8}$ d. per lb. was paid for the superior roller-ginned cotton. Prices ranged between $1\frac{3}{8}$ d. and $1\frac{1}{2}$ d. for Grade 1, which amounted to 85.67% of the total crop, and second grade was bought at one-quarter of the price paid for Grade 1. Approximately £50,000 were paid out to Trust Land cotton growers, four-fifths of this sum being received by the 34,000 growers on the Lower River.

After the Protectorate's requirements for cotton seed had been met there remained a surplus of approximately 1,000 tons of first grade seed, which was eventually sold to the Ministry of Food.

European production of seed cotton amounted to 19 short tons as compared with 17 tons in 1943.

TEA.

Once again the tea industry suffered from adverse weather conditions. The partial repetition of the mid-season drought, which has caused great anxiety and loss for the past four years, was in 1944 preceded by a cold and sunless period in February and March. This in addition to the indifferent start to the year resulting from the drought of 1943 inevitably affected yields. Nevertheless conditions were on the whole somewhat better than in the previous year and with increased acreage of young tea coming into bearing the exports for 1944 exceeded those of 1943 by 14%. They remain, however, less than 60% of the permissible quota at its present level of 125%.

The sulphur deficiency disease, "Tea Yellows," again became apparent with the incidence of the drought and Red Spider was more in evidence than in the last two seasons. *Armillaria mellea* caused less damage than occurred before the severe drought of 1941 when all the more heavily infected bushes succumbed. Mosquito Blight (*Helopeltis bergrothi*, Reut.) caused normal damage in nursery beds, but there appeared to be an increase in the incidence of this pest on older tea.

During the year the International Tea Committee made a further allotment of 4,040 acres for the growing of tea in Nyasaland and a Committee was appointed to advise and report upon the method of allocation to be adopted within the Protectorate. The Commission's recommendations were accepted by Government and allocations of new acreage were made accordingly. The total tea acreage now allowed in Nyasaland amounts to 24,240 acres.

TUNG.

On the whole climatic conditions favoured Tung in the principal area in which it is grown but severe hail storms did much damage in one part of the Cholo district. The gradual expansion of acreage has continued and 1,334 acres were planted up during the year bringing the total now under the crop to 8,349 acres. Considerable effort has been devoted by the majority of tung planters to the improvement of existing plantations by the top-working of seedling trees with bud wood of proved clones and in the conversion of superfluous male trees. In other cases unprofitable *fordii* trees have been replaced by *montana*. In consequence of these improvements and the increasing productivity of established plantations, the export of oil nearly doubled that of 1943 and amounted to 45 tons for the year. As in the previous war years the disposal of the oil has been controlled by the Ministry of Supply and prices were maintained at a very satisfactory level. The export of nuts is still prohibited except for seed purposes and 3,017 lb. were dispatched from the Protectorate for this purpose during the year.

A thorough reconnaissance of the potentialities of native tung growing in the Central and Northern Provinces was made during 1944 by the Tung Officer. Of the areas at present occupied by natives, the Upper Henga Valley is the only one in which it may confidently be stated, without preliminary trials, that tung will succeed, and accordingly nurseries were sown for the subsequent issue of budded trees to selected growers in this area. Elsewhere there are various areas in which soil, climate and topography suggest that successful tung growing is a possibility and at six widely distributed sites trials have been established.

MINOR CROPS.

Wheat. Fortified by the declaration of a firm price to the grower of $1\frac{1}{4}$ d. per lb. the increased efforts of the Department to develop the local production of wheat have met with some success. The total output rose from 211 short tons in 1943 to 372 tons in 1944, three-quarters of which was grown in the Kirk Range in the Ncheu and Neno districts. Weather conditions were favourable and the crop was free of rust. Consumption in the Protectorate has increased to such an extent that still further expansion is necessary to achieve self-sufficiency, and there is a great need for improvement in quality, to which end selected imported varieties are constantly under examination.

Rice. Despite adverse weather in one of the main rice growing districts, the total market sales for the Protectorate exceeded last year's record by 10% and amounted to 1,293 short tons of cleaned rice. Of this total 73% was purchased in the Karonga and Kota Kota districts. The former district enjoyed generally favourable conditions which the growers utilized industriously, but in Kota Kota the rains began very late, severe flooding followed and the growing season terminated abruptly, with the result that local yields were well below those of 1943. In addition to recorded sales made in produce markets appreciable quantities were hawked by growers from Mlanje and Dedza districts. As a result of the increased total production a surplus above the Protectorate's internal requirements existed for the first time since the outbreak of war and it is probable that approximately 400 tons of rice may be exported

early in 1945. The guaranteed increased price of $\frac{3}{4}$ d. per lb. of paddy was announced too late in 1943 to influence the 1944 crop, but the price gave evident satisfaction and should result in greater production in 1945. There is, however, a definite need for short-term varieties of paddy to offset deficiencies in rainfall which, in the absence of controlled irrigation, cause periodical losses of some magnitude. Trials with introduced short-term varieties are yielding some promising results. There is also room for considerable improvement in cultural practices, notably in nursery and transplanting technique.

European Potatoes. In the main producing areas of Ncheu and Dedza the demand for potatoes for the relief of the native food shortage in Lilongwe provided a further stimulus to this increasing industry. In consequence 648 short tons were sold at organised markets during the year, approximately 400 tons of which were devoted to relieve the food shortage experienced in the Lilongwe district. Sales in 1943 amounted to 245 tons. During the latter part of 1944 the demand for export, principally to Portuguese East Africa, was very keen and led to the marketing of immature tubers, the condition of which on arrival in Beira was not satisfactory. In normal years the success of the potato industry must depend primarily on the export market and in order to ensure good quality, Potato Grading Rules were introduced in December, under the Marketing of Native Produce Ordinance.

Maize. Although not approaching the optimum, weather conditions were generally favourable for maize production, and the deficiencies from the previous season were readily supplied leaving an aggregate reserve in the hands of the growers sufficient to last until the 1945 harvest. Early in the year approximately 1,000 tons of maize were obtained in the Southern Province and dispatched to Lilongwe for the relief of the local shortage and, in order to safeguard the succeeding harvest against thoughtless disposal to the many non-producers anxious to buy, it was necessary to control sale and purchase by means of permits under the Native Foodstuffs Ordinance. In the event supplies proved adequate, partly as a result of the response by certain local planters to an appeal that they should themselves grow more of their own maize requirements. In all, over 8,500 tons of maize were purchased from native growers for consumption within the Protectorate, approximately half of this total being grown in Mlanje district. To implement Government's undertaking that a market would be provided for all surplus foodstuffs grown in response to the food production campaign, arrangements were made to purchase any maize surplus which became available late in the year in Ncheu district. Some delay in establishing markets and the early onset of the rains resulted in the surplus being largely withheld by growers, and in the event a negligible quantity only was bought.

Groundnuts. As a result of the high prices which have been paid for groundnuts during the recent war years an appreciable increase in acreage was planted, which in the Dowa district took place at the expense of cotton. Weather was favourable, particularly in the Southern Province and there is reason to believe that spacing and cultural methods have improved in response to constant instruction and that inter-planting with maize has been more widely adopted, with beneficial results. A total of 578 tons of shelled nuts was sold in Native Produce Markets and of this amount, which was nearly three times that of 1943, 198 tons were exported to the Rhodesias, constituting the first exports of this commodity which have been possible for the past three years. The incidence of Rosette Disease was everywhere slight, and it is possible that the improved cultural practices referred to have contributed to this state of affairs. It is believed that the increased cultivation and sale of groundnuts has been accompanied by a larger consumption of this crop as food by Africans which it is hoped will continue.

Beans. By contrast with 1943 weather conditions were generally excellent for beans and only in Karonga was the crop a failure. In the Southern Province the early sowings were severely damaged by beetle (*Ootheca mutabilis*, Sahlb.) but the late crop largely compensated for this loss and 864 tons were sold in Produce Markets throughout the Protectorate. This was much in excess of local requirements and considerable export at remunerative prices took place towards the end of the year.

A premium was paid for red Canadian Wonder beans and greater attention to the production and grading of this type would appear to be justified.

Pyrethrum. The cultivation of this crop on the Nyika Plateau has now emerged successfully from the experimental stage into commercial production, under the Exclusive Licence granted in 1943. Some 58 native growers between them produced one ton of dried flowers which was powdered and sold locally by the Licensee. The price paid by the Licensee for dried flowers has given general satisfaction but no rapid increase in production is anticipated since the conditions under which the crop is grown necessitate arduous toil, the growers having to ascend the Plateau to tend their gardens as requisite. A considerable proportion of the area on the Nyika planted with pyrethrum is not yet in full production. Trial plots in other parts of the Protectorate in which the crop might be expected to succeed have not yielded any conclusive results so far, but that on the Kirk Range in Ncheu district offers some promise.

Rubber. Plantation rubber from Vizara in Chinteché amounted to 98 short tons, a decline of 17% on the export figures for 1943. This drop was due to excessive rain hindering tapping and at times to a shortage of tappers. Wild rubber likewise declined from 25 to 11 tons. Despite continued propaganda and encouragement, coupled with experiment and instruction in the more efficient extraction of root rubber, the interest of the Chinteché natives in this industry has steadily declined. The more accessible vines have temporarily become exhausted, but disinclination for manual work and the comparative wealthiness of the people have deterred them from the extra effort required for collection further afield. The Rubber Adviser to the Ministry of Supply toured the rubber areas of the Protectorate during the year and made various suggestions whereby output might be increased, but the results of the measures recommended were considered as unlikely to be worth the dislocation of native life which they would have occasioned.

Castor Seed. It is of interest to record that 89 tons of castor seed were purchased in the Salima area and exported from the Protectorate in 1944. The crop is only haphazardly planted and is not tended in any way but seed collected from plants on stream banks and the margins of garden land can make a profitable side-line at 1d. per lb.

PESTS AND DISEASES.

INSECT PESTS.

Crop Pests. With the exception of a rather heavy early attack by Red Bollworm (*Diparopsis castanea*, Hmps.) on cotton in the Lower River districts, and some damage to winter cereals by Army Worm (*Laphygma exempta*, Walk.) during March and April in parts of the Southern Province, no serious outbreak of insect pests occurred.

Tobacco Beetle (*Lasioderma serricorne*, F.) continued to give a fair amount of trouble in retailers' stocks of both locally manufactured and imported cigarettes, undoubtedly largely due to the enforced use of paper and cardboard packing which is no safeguard against infection taking place in the stores themselves. The pest was gradually brought within normal bounds with the co-operation of the retailers and the pyrethrum-oil spraying of certain local factories.

The association of the Tobacco Aphis (*Myzus persicae*, Sulz.) and the weed *Gynandropsis pentaphylla* during the dry season has been amply proved, particularly in the Northern Province.

Scale Insects continue to appear to be the worst potential pests of tung, but no serious development of the Mealy Bug (*Pseudococcus perniciosus*, W. and N.) was reported.

Tea continued to remain extremely free from insect pests, though there were indications that Bagworms (*Psychidae*) of various kinds, in particular the "Pagoda" type (? *Acanthopsyche* sp.), might be increasing in numbers, particularly in the Cholo tea area.

Cinchona seedlings at the Zomba Experimental Station suffered a severe set-back in August from attack by a few nymphs of *Helopeltis bergrothi*, Reut. Recovery was, however, good within a few weeks of the removal of the pest.

Citrus, throughout the Protectorate, suffered unusually heavily from the Psyllid, *Spanioza erythrae*, del G.

The lack of fumigants, particularly carbon bisulphide, for treating stored food-products is a serious matter that cannot easily be overcome.

Locusts. There was very little development of the Red Locust (*Nomadacris septemfasciata*, Serv.) throughout the whole of the Protectorate.

A few small pockets of hoppers were reported in January and February in the Chiromo, Ngabu, Tengani area of the Lower Shire district, none of them more than about 10 square yards in extent, and they were largely exterminated by beating and predaceous birds.

In late March and early April a small band (100 yd. by 40 yd. only) was reported near the main north road crossing of the Bua River in the Kasungu district, and two others in flooded dambos in the northern lake littoral of the Kota Kota district. None of these hopper bands produced flying swarms.

Locusts of the solitary phase were recorded from time to time during the year in the lake shore areas of the Dowa and Kota Kota districts, but not in as many numbers as in the previous year, and no reports had been received by the end of the year of any development having taken place.

INSECT PEST CONTROL—EMPIRE COTTON GROWING CORPORATION.

The Insect Pest Control section of the Empire Cotton Growing Corporation has continued its investigation into the pests of the Lower River cotton crop, principally Red Bollworm (*Diparopsis castanea*, Hmps.). Work on this problem, which is one of considerable magnitude in the main cotton area of the Protectorate, has been in progress for six years, and investigations are nearing successful completion. A full report of this work and suggestions for the control of the pest are at present being prepared.

SOIL CONSERVATION.

The rate at which soil erosion and over-cultivation continues all over the Protectorate is a matter of the utmost concern to the Department and one which constantly occupies a major part of its attention. Whilst it is gratifying to record that the European community is becoming increasingly aware of the danger it has not yet been possible to persuade the bulk of the native population to appreciate the outcome of expecting its growing numbers to subsist and improve their lot on dwindling natural resources.

The soil conservation policy pursued by the Department has been to endeavour to substitute contour and box ridging for the indigenous system of flat and mound cultivation over as wide an area as possible, as the simplest effective expedient likely to be adopted on a large scale in a reasonable space of time. At the same time concentrated and more detailed attention is given to certain severely eroded or threatened areas in a planned attempt to arrest or rectify the damage. In the pursuit of both these objectives operations continue to be badly hampered by shortage of staff, but some progress has been made. The method by which the first objective is tackled is unceasing instruction and persuasion, backed by Native Authority Orders, and results vary therefore according to the executive ability of the Native Authority concerned. Intensive conservation projects have been particularly handicapped by lack of staff, as they require expert supervision and time, but each member of the field staff of the Department has given as much of his attention as possible to the protection or resuscitation of some particularly worn out or threatened area. Of these the more spectacular have been the projects for which financial assistance has been provided by the Colonial Development Fund. In the Port Herald district, 20 miles of storm drain have been dug as part of a comprehensive protective plan for a large area of the Shire River plain.

south of Port Herald. The headwaters of several important streams are being preserved by Forest Reservation and a start has been made, not without difficulty, in inducing local cultivators to protect their gardens by box ridges. A smaller scheme, of a similar nature, has been started in Dedza district, where excessive cattle population has added its difficulties to the human problem. Shortage of labour limited the storm drain work which could be undertaken and completed, and apathy amongst the local people hindered progress in the protection of their own gardens, but the work continues. The very successful Misuku Land Usage Scheme, which has received much publicity, is being extended in Karonga district to other adjacent areas. Throughout the length and breadth of the Protectorate other projects of varying size are proceeding. Of these the more successful are local conservation schemes in Mlanje district and the Livulezi Valley in Ncheu district. There is no denying the fact, however, that despite these efforts soil deterioration is gaining over conservation and that satisfactory methods of arresting it must depend upon properly planned and co-ordinated effort with a greatly increased staff, which should be available after the war.

MARKETING OF NATIVE PRODUCE.

The marketing organisation of native food crops has continued to work smoothly, and the Lake Shore area of Dowa and the northern part of Mzimba district have been brought under the control of the Marketing Ordinance. Potatoes in Ncheu and Dedza have been scheduled under the Ordinance and grading rules have been added in an endeavour to ensure that exported produce is of a good, uniform type capable of withstanding prolonged transport and storage. The erection of permanent Produce Markets continues, and a second brick structure built in Mlanje district has handled a considerable quantity of produce with success. Other semi-permanent markets have been built in Dedza district. The total weight of food crops sold in Native produce markets gazetted under the Ordinance exceeded 11,000 tons

MAKWAPALA AGRICULTURAL TRAINING CENTRE.

In the Final Examination in July, nine of the Native Agricultural Instructors seconded in 1942 for full training were successful and have been admitted on probation to Grade III of the Native Civil Service.

The 1943 group of students sat for a mid-term examination at the end of their first year's training in September, and all fifteen students qualified for the second year. The efficiency shown by these students amply justified the decision to make Standard V the minimum qualification for entrance to the regular course. It is noteworthy that of these men, two had served for 7 or 8 years, and two for nearly 3 years, as Native Agricultural Instructors in the Department; while of the remainder who are new to the work, five are men with some experience as Village School teachers in Mission Schools.

The 25 candidates who entered the Probationary Course in October showed very considerable promise as a group. They included a larger proportion than had been anticipated of students of more mature age, with the developed personality which is so important for their subsequent work as Native Agricultural Instructors. Ten of these candidates have passed Standard VI, the remaining fifteen having passed Standard V.

Two other students were admitted to the school. These men are teachers and were entered by their respective Missions as fee-paying students, one for three months only and the other for the full 2-years' course. They are destined to return to their Missions as Agricultural Teachers.

The course of "General Agriculture" for probationers has been further developed under a new title, "Rural Science," to serve not only as an introduction to the most important topics dealt with in the full course, but also to be a complete refresher course for African teachers from Missions, or Native Agricultural Instructors whose lack of general education precludes them from taking the full course. More time is being devoted to assisting students in relating the more academic aspects of their training to the field work required of a Native Agricultural Instructor, and an additional section for the syllabus has been drafted towards this end.

In addition to the regular course, two short courses of practical and theoretical instruction for Soil Conservation Rangers were held by arrangement with the Soil Conservation Officer, and eleven Rangers attended.

FINANCE.

The revenue derived from the sale of planting material and produce from the main Experimental Stations was as follows:—

	£
Tea Experimental Station, Mlanje	1,023
Tung Experimental Station, Cholo	280
Zomba Experimental Station	699
Port Herald Experimental Station	29
Likuni Experimental Station (Lilongwe)... ..	29
Mwera Hill (Dowa)	10

LEGISLATION.

(a) The Cotton (Amendment) Ordinance, 1944, provides for the payment of any profit derived by Government from the marketing of cotton into the Native Development and Welfare Fund.

(b) The Tea (Amendment) Ordinance, 1944, provides for the additional tea-acreage allocated to the Protectorate under the Restriction Scheme and extends the validity of the Ordinance for the duration of hostilities and for two clear quota years thereafter.

(c) The Tobacco (Amendment) Ordinance, 1944, requires native tobacco growers to produce their registration certificates when selling their crop.

(d) The Tobacco (Amendment) (No. 2) Ordinance, 1944, and the Native Tobacco Board (Amendment No. 2) Rules, 1944, provide for the payment of any surplus funds held by the Native Tobacco Board into the Native Development and Welfare Fund.

(e) Government Notices Nos. 33, 35 and 97 extend the operation of the Marketing of Native Produce Ordinance into new areas and districts of the Protectorate.

(f) Government Notice No. 91 of 1944, contains the conditions to be annexed to licences to purchase potatoes in declared areas.

(g) Government Notice No. 98 of 1944, removes the restriction on the importation of Dahlia plants and tubers from Southern Rhodesia.

(h) The Tobacco (Uprooting) (Amendment) Rules, 1944, fixes the responsibility for the carrying out of the Rules.

(i) The Native Tobacco Board (Amendment No. 3) Rules, 1944, empowers the Chairman to impose conditions when issuing licences to purchase Native Trust Land Tobacco.

ACKNOWLEDGMENT.

It is fitting to record my appreciation of the wholehearted co-operation which has been forthcoming from other departments and unofficials and of the assistance they have so readily given to promote good agricultural practice in the Protectorate. I also wish to express my gratitude to the staff of the Department—European and African alike who have so willingly and loyally accepted the increased burdens which have inevitably fallen upon them during the years of war.

G. W. NYE,
Director of Agriculture.